What is claimed:

1. A method for manufacturing a semiconductor chip, the method comprising forming an electrode on a first surface of a semiconductor chip, and then digging a hole from a second surface of the semiconductor chip until the electrode is exposed.

2. A method as in claim 1, wherein the second surface is located opposite to the first surface.

3. A method as in claim 2, wherein the electrode is formed to include a first layer and a second layer, and the hole contacts the first layer of the electrode.

4. A method for manufacturing a semiconductor chip, the method comprising: forming an electrode on a surface of a first semiconductor chip and thereafter forming a hole from another surface of the first semiconductor chip until the electrode is exposed, forming a protrusion by etching a surface of a second semiconductor chip and thereafter forming an abutting electrode on an apex section of the protrusion, and positioning the first semiconductor chip and the second semiconductor chip such that the abutting electrode contacts the electrode.

5. A method as in claim 4, wherein forming a hole from another surface comprises forming the hold from a surface that is opposite to the surface the electrode was formed on.

6. A method for manufacturing a semiconductor device, the method comprising: forming a metal film on a surface of a first semiconductor chip, forming a hole by an anodic forming method using a dielectric layer coated on an opposite surface of the first semiconductor chip as a mask, thereafter removing the metal film, and forming an electrode on a portion of the surface of the first semiconductor chip in a manner to embed the hole

7. A method for manufacturing a semiconductor device according to claim 2, wherein, after the hole is formed, a metal film is formed on the electrode from the opposite surface.

8. A method for manufacturing a semiconductor device according to claim 3, wherein, after the hole is formed, a metal film is formed on the electrode from the opposite surface.

9. A semiconductor chip comprising an electrode formed on a first surface thereof and a hole that exposes the electrode through a second surface thereof.

10. A semiconductor chip according to claim 9, wherein the second surface is located opposite to the first surface.

11. A semiconductor device comprising: a first semiconductor chip having a first electrode formed on a surface thereof and a hole through the first semiconductor chip that exposes the electrode, and a second semiconductor chip having a protrusion for insertion in the hole through the first semiconductor chip and an abutting electrode on the protrusion adapted to contact the first electrode.

12. A semiconductor device according to claim 11, wherein the first semiconductor chip and the second semiconductor chip have a crystal orientation face of (100).

13. A semiconductor device according to claim 11, wherein the first semiconductor chip and the second semiconductor chip have a crystal orientation face of (110).

14. A semiconductor device according to claim 11, wherein a metal film is coherently formed on a surface of the first electrode, and the first electrode and the abutting electrode are brought in contact with each other through the metal film.

15. A connection substrate comprising the semiconductor device set forth in claim 11.

16. An electronic apparatus comprising a connection substrate set forth in claim 15.

17. A semiconductor device including

a first substrate having a first electrode thereon;

an opening extending through said first substrate, the opening positioned so that the first electrode extends across the opening;

a second substrate including a protrusion on which a second electrode is located;

wherein the protrusion extends into the opening and the second electrode is electrically connected to the first electrode.

18. A semiconductor device as in claim 17, further comprising an conducting adhesive disposed between the first electrode and the second electrode.

19. A semiconductor device as in claim 17, further comprising a metal layer between the first electrode and the second electrode.

20. A semiconductor device as in claim 17, further comprising a dielectric layer on a surface of the first substrate that faces the second substrate to electrically separate portions of the first substrate from the second substrate.

21. A semiconductor device as in claim 17, wherein the first electrode and second electrode are in direct contact with each other.

22. A method for forming a semiconductor device comprising:

forming a first electrode on a first surface of a first substrate;

forming an opening from a second surface of the first substrate to the first surface, wherein a portion of the first electrode is exposed through the opening;

forming a second electrode on a second substrate;

positioning the second electrode in the opening and electrically connecting the first electrode to the second electrode.

23. A method as in claim 22, further comprising forming a dielectric layer on at least one of the first substrate and second substrate and positioning the dielectric layer to prevent a short circuit between the first substrate and second substrate.